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10/687,407

10/14/2003

Ji-Ung Lee

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03/21/2006

GENERAL ELECTRIC COMPANY  
GLOBAL RESEARCH  
PATENT DOCKET RM. BLDG. K1-4A59  
NISKAYUNA, NY 12309

EXAMINER

GABOR, OTILIA

ART UNIT

PAPER NUMBER

2884

DATE MAILED: 03/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/687,407

Applicant(s)

LEE ET AL.

Examiner

Otilia Gabor

Art Unit

2884

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2003 and 18 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

***Response to Amendment***

1. The amendment filed on 01/18/2006 was entered.

***Drawings***

2. The drawings were received on 01/18/2006. These drawings are approved.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 5, 6, 8, 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. Claims 5, 6, 13 recite the limitation "the conductive layer" in line 1 (claims 5, 6) and line 2 (claim 13). There is insufficient antecedent basis for this limitation in the claim.
6. There is no conductive layer claimed in claim 1 from which all of the above claims depend.
7. Claim 8 recites the limitation "the source metal via" in line 2. There is insufficient antecedent basis for this limitation in the claim.
8. There is no source metal via claimed in claim 1 from which the claim depends.

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1-3, 5-9, 12-15 are rejected under 35 U.S.C. 102(a) as being clearly anticipated by Lee et al. (US 2003/0189175 A1).

11. Claims 1-3, 5-9, 12-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Lee et al. (U. S. Patent 6,740,884)

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Lee discloses an X-ray imager, comprising:

- a plurality of pixels (22) disposed on a substrate (20) in an imaging array pattern comprising rows and columns, each of the pixels comprising a respective photosensor (26) coupled to a respective thin film transistor (TFT 28)
- a plurality of scan lines (32) disposed on a first level with respect to the substrate (20) along a first axis of the imaging array, each row having a respective scan line, and each of the scan lines being coupled to a respective gate electrode (66) in the TFT (28)
- a plurality of data lines (30) disposed at a second level with respect to the substrate (20) along a second axis of the imaging array, each column having a corresponding data line, and each of the data lines being coupled to a respective source electrode (50) in the TFT (28)

wherein

- each pixel comprises a storage capacitor (24) coupled parallel to the photosensor (26), the storage capacitor comprising a signal electrode (68) and a common electrode (54) with a dielectric layer (64). See Figs.2-8 and corresponding description.

Regarding claims 14, 15 Lee discloses that the imager is an X-ray imager, and that the capacitor is disposed under the photosensor (see Fig.3).

Regarding claims 2, 5-9, 12, 13 Lee discloses that the capacitor signal electrode comprises at least two conductive layers that form the lower pixel electrode of the photosensor and the source electrode (50), and that the conductive layer and the signal electrode is coupled by a source metal via (78). Lee also discloses a plurality

of vias (76,78,80) coupling the capacitor signal electrode to the photosensor and a plurality of holes etched in the common electrode under the plurality of vias (see Figures). Lee also discloses that the capacitor signal electrode is larger than the common electrode and that the photosensor is larger than the conductive layer (see Figures 3, 6-8).

Regarding claim 3 Lee discloses that the gate electrode (66) and the capacitor signal electrode (68) comprises the same material (see Col.5, lines 10-17).

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

14. Claims 4, 10, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee.

Regarding claim 4 Lee fails to explicitly disclose that the capacitor common electrode comprises one of the claimed materials, however he does disclose the claimed materials as materials available for the other capacitor electrode. As such, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the claimed materials as the capacitor common electrode, since these materials are well known and used electrode materials and since it has been held to be within the general skill of a worker in the art to select as known material on the basis of its suitability for the intended use (*In re Leshin*, 125 USPQ 416).

Regarding claims 10 and 11 Lee discloses that any number of coupling vias can be used in the imaging system but fails to specifically disclose that the number and distance between the vias is determined based on the required time constant of the photosensor. However, since he does not put any limitation as to the number and distance between the vias it would have been obvious to one having ordinary skill in the art to chose the number and distance between the vias based on to the time constant of the photosensor since such a determination is well known to those working in this field.

### ***Response to Arguments***

15. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

**Conclusion**


16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Rougeot et al. (5,198,673); Weisfeld (5,744,807); Kobayashi et al. (6,664,527; 5,770,871); Bergquist (US 2003/0234759 A1).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Otilia Gabor whose telephone number is 571-272-2435. The examiner can normally be reached on Monday-Friday between 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Otilia Gabor  
Primary Examiner  
Art Unit 2884



**OTILIA GABOR**  
**PRIMARY EXAMINER**